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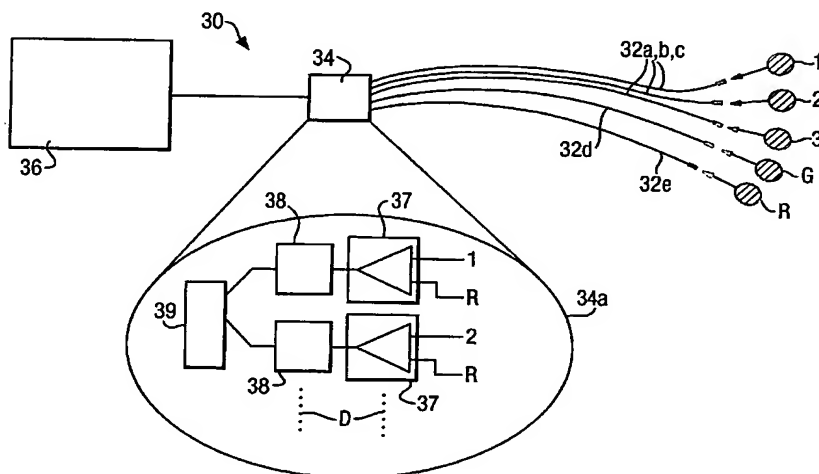
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(54) Title: MONITORING ELECTRICAL MUSCULAR ACTIVITY



(57) Abstract: A method of monitoring muscular electrical activity non-invasively (such as uterine activity) which includes applying a localised group of electrodes (7, 8, 10 to 12) to a patient's skin and monitoring signals thereon. The electrodes (7, 8, 10 to 12) are localised sufficiently such that their muscular signal contributions simulate a single source despite source non-stationarity. The signals are amplified, filtered and digitised. They are then digitally filtered and processed by independent component analysis (ICA) to separate a muscular activity source from other sources. The method may be used to monitor maternal uterine activity, fetal activity and maternal and fetal cardiac activity simultaneously with the aid of additional electrodes (1 to 6, 9) and associated circuitry (32 to 39).

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